

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 10/730,059
Atty. Docket No. Q78807

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (withdrawn): A double suction-type sucker which suction-adheres a printing plate, a protective sheet including a predetermined porosity being interposed between the sucker and the printing plate, the sucker comprising:

a mounting base portion;

a main body portion disposed downward of the mounting base portion;

a skirt portion attached at a lower portion of the main body portion and capable of closely corresponding with the protective sheet for suction-adherence of the printing plate; and

a joining structure which joins the mounting portion with the main body portion, the joining structure converting a moment which acts on the main body portion and the skirt portion during a suction-adherence operation to two intersecting force components for reducing deformation of the main body portion and preventing relative movement between the protective sheet and the printing plate.

2. (withdrawn): The sucker of claim 1, wherein the main body portion comprises stiffness.

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3. (withdrawn): The sucker of claim 1, wherein the skirt portion comprises resilience.
4. (withdrawn): The sucker of claim 1, wherein the skirt portion comprises an outer periphery capable of closely corresponding with the protective sheet during the suction-adherence operation.
5. (withdrawn): The sucker of claim 1, wherein the joining structure comprises a spring.
6. (withdrawn): The sucker of claim 1, wherein the joining structure comprises a tubular body fabricated of rubber.
7. (withdrawn): The sucker of claim 1, wherein the joining structure comprises a support shaft, a stopper and a spring.
8. (previously presented): A sucker capable of suction-adhering a printing plate and a protective sheet interposed between the sucker and the printing plate, the sucker comprising:
a main body portion integrally including a mounting base portion and including a suction-adherence surface; and

a skirt portion attached at the suction-adherence surface side of the main body portion, said skirt portion being configured so as to closely correspond with the protective sheet during a suction-adherence operation of the printing plate,

wherein the main body portion includes a predetermined stiffness for reducing deformation of the main body portion and preventing relative movement between the protective sheet and the printing plate during the suction-adherence operation; and

wherein the skirt portion is configured with a predetermined resilience such that, during the suction-adherence operation, a surface of the skirt portion that closely corresponds with the protective sheet is substantially parallel to the suction-adherence surface of the main body portion.

9. (previously presented): A sucker capable of suction-adhering a printing plate and a protective sheet interposed between the sucker and the printing plate, the sucker comprising:

a main body portion integrally including a mounting base portion and including a suction-adherence surface; and

a skirt portion attached at the suction-adherence surface side of the main body portion, said skirt portion being configured so as to closely correspond with the protective sheet during a suction-adherence operation of the printing plate,

wherein the main body portion includes a predetermined stiffness for reducing deformation of the main body portion and preventing relative movement between the protective sheet and the printing plate during the suction-adherence operation; and

wherein, if a resilient force in the skirt portion in a suction direction, which intersects the suction-adherence surface, is E_1 ,

a resilient force in the skirt portion in a direction parallel to the suction-adherence surface is E_2 ,

a total component in the suction direction of a suction force during the suction-adherence operation is P_1 , and

a total component of this suction force parallel to the suction-adherence surface is P_2 , then

$$E_1 < P_1 \text{ and } E_2 > P_2.$$

10. (currently amended): A sucker capable of suction-adhering a printing plate and a protective sheet interposed between the sucker and the printing plate, the sucker comprising:

a main body portion integrally including a mounting base portion and including a suction-adherence surface; and

a skirt portion attached at the suction-adherence surface side of the main body portion, said skirt portion being configured so as to closely correspond with the protective sheet during a suction-adherence operation of the printing plate,

wherein the main body portion includes a predetermined stiffness for reducing deformation of the main body portion and preventing relative movement between the protective sheet and the printing plate during the suction-adherence operation; and

wherein the sucker is configured such that when the sucker is suction-adhering the printing plate and protective sheet during the suction adherence operation, a gap t between the suction-adherence surface and the protective sheet is set in accordance with a resilient force in the skirt portion, a coefficient of friction between the skirt portion and the protective sheet, and stiffness of the protective sheet,

and the gap t is set to a range such that the protective sheet will substantially not be drawn in toward the suction-adherence surface during the suction-adherence of the protective sheet;

wherein the sucker is configured such that when the sucker is suction-adhering the printing plate and protective sheet during the suction-adherence operation, the gap t formed between the suction-adherence surface and the protective sheet satisfies: $0 \leq t \leq 0.5 \text{ mm}$.

11. - 12. (canceled).

13. (original): The sucker of claim 8, wherein the suction-adherence surface comprises a surface including numerous minute protrusions and indentations.

14. (canceled).

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15. (original): The sucker of claim 8, wherein the skirt portion comprises an outer periphery capable of closely corresponding with the protective sheet during the suction-adherence operation.

16. (previously presented): The sucker of claim 8, wherein the suction-adherence surface comprises at least one of a sponge and a brush.